Claims

1. A method for varying the impedance of a motor having N phases, where N is greater than three, comprising:
   a) synthesizing a plurality of phases of alternating current output using an inverter system, and connecting each phase electrically to at least one inverter terminal;
   a) connecting, electrically, each phase of said motor to:
      (i) a first terminal of said inverter;
      (ii) a second terminal of said inverter S skipped terminals distant from said first terminal in order of electrical phase angle, where S is the skip number and represents the number of skipped terminals;
   so that a phase angle difference between the two inverter terminals to which each motor phase is connected is identical for each motor phase;
   c) varying the phase angle difference between said first terminal and said second terminal.

2. The method of claim 1 further comprising the step of
   a) receiving a signal indicating a requirement to vary the impedance of the motor,
   and wherein said step of varying the phase angle difference comprises varying the phase angle difference substantially in accordance with said requirement to vary the impedance of the motor.

3. The method of claim 1 wherein said step of varying the phase angle difference comprises: decreasing the phase angle difference between said first terminal and said second terminal to increase the impedance of the motor.

4. The method of claim 1 wherein said step of varying the phase angle difference comprises: increasing the phase angle difference between said first terminal and said second terminal to decrease the impedance of the motor.

5. The method of claim 1 wherein N is an odd number, and wherein said step of varying the phase angle difference between said first terminal and said second terminal comprises switching a drive waveform of said inverter from a fundamental frequency output to a harmonic thereof.

6. The method of claim 1 wherein N is an odd number, and wherein said step of varying the phase angle difference between said first terminal and said second terminal comprises superimposing upon a primary drive waveform of said inverter, one or more harmonics thereof, to a required degree of superimposition.

7. The method of claim 1 wherein N is a multiple of 3, and wherein the skip number is N/3, and wherein said step of varying the phase angle difference comprises multiplying each of the phase angles by 3 to decrease the impedance of the motor.

8. The method of claim 1 wherein N is a multiple of 3, and wherein the skip number is N/3, and wherein said step of varying the phase angle difference comprises dividing each of the phase angles by 3 to increase the impedance of the motor.

9. The method of claim 1 wherein N is not a multiple of 3, and wherein the skip number is (N/3)-1 rounded to the nearest integer, and wherein said step of varying the phase angle difference comprises multiplying each of the phase angles by 3 to decrease the impedance of the motor.

10. The method of claim 1 wherein N is not a multiple of 3, and wherein the skip number is (N/3)-1 rounded to the nearest integer, and wherein said step of varying the phase angle difference comprises dividing each of the phase angles by 3 to increase the impedance of the motor.

11. The method of claim 1 wherein the step of varying the phase angle difference comprises the step of providing increasing proportions of one or more odd order harmonics.

12. The method of claim 1 wherein a phase angle difference between said first terminal and said second terminal is approximately 120 degrees, and wherein said step varying the phase angle difference comprises adding a third harmonic component to a primary drive waveform of the inverter.

13. The method of claim 12 wherein said step of adding a third harmonic component is done gradually.

14. The method of claim 1 wherein said steps of connecting the motor to a first terminal and connecting said motor to a second terminal is done to achieve the largest phase angle difference possible between the two terminals of each winding.